Remarks

The Office Action mailed October 1, 2004 has been carefully reviewed and the foregoing amendments have been made in consequence thereof.

Claims 1-20 are now pending in this application. Claims 1-20 stand rejected. Claims 3, 10, 14, and 17 are canceled.

The objection to Claim 6 due to informalities is respectfully traversed. Claim 6 has been amended to add the word "coupled" after "disk retainer." It is submitted that this amendment corrects an obvious typographical error and does not affect the scope of the claim. Applicants therefore request that the objection to Claim 6 be withdrawn.

The objection to Claims 8 and 16 due to informalities is respectfully traversed. Claims 8 and 16 have been amended to recite "catenary." It is submitted that this amendment corrects an obvious typographical error and does not affect the scope of the claim. Applicants therefore request that the objection to Claims 8 and 16 be withdrawn.

The rejection of Claims 1-7, 10-15, and 17-20 under 35 U.S.C. § 102(b) as being anticipated by Kalogeros (U.S. Patent No. 4,659,289) is respectfully traversed.

Kalogeros describes a turbine side plate assembly 22 between first and second stage turbines 10 and 16. Outer rim 24 spans the rear of disk 12 and the front of disk 18. "O" seals 26 and 28 bear against axial projections 30 and 32 to facilitate minimizing leakage from the gas path that is outboard of the seal in the vicinity of blades 14 and 20. Rim 24 extends axially, and together with "O" seals 26 and 28 substantially seals cavity 34 from the engine's working fluid medium. Rim 24 extends axially and forms a generally cylindrical shape. Notably, "O" seals in the side plate assembly are positioned against the projections to minimize leakage.

Claim 1 recites method for assembling a seal assembly for a gas turbine engine rotor assembly, wherein the method comprises "coupling a disk retainer to a first stage disk, and coupling an interstage seal assembly including an outer shell within the rotor assembly such

that a downstream arm extending from the outer shell engages a second stage disk while an upstream arm extending from the outer shell engages the disk retainer in an interference fit."

Kalogeros does not describe nor suggest a method for assembling a seal assembly for a gas turbine engine as is recited in Claim 1. Specifically, Kalogeros does not describe nor suggest coupling an interstage seal assembly to a disk retainer using an interference fit, nor does Kalogeros describe or suggest coupling an interstage seal assembly to a second stage disk using an interference fit. Rather, in contrast to the present invention, Kalogeros describes a turbine side plate assembly that is positioned between first and second stage turbines and positions "O" seals in the side plate assembly against the projections to minimize leakage.

Claims 2, 4, and 5 depend from independent Claim 1. When the recitations of Claims 2, 4, and 5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2, 4, and 5 likewise are patentable over Kalogeros.

Claim 6 recites a seal assembly for a gas turbine engine including a first stage disk and a second stage disk, wherein the seal assembly comprises "a disk retainer, and an interstage seal assembly extending between the first and second stage disks, said interstage seal assembly comprising a radially outer shell extending radially outward from a web portion, said outer shell comprising an upstream arm and a downstream arm extending outwardly from said outer shell, said disk retainer coupled between said outer shell upstream arm and the first stage disk, said downstream arm coupled to said second stage disk wherein said upstream arm is coupled to said disk retainer with an interference fit and said downstream arm is coupled to the second stage disk with an interference fit.

Kalogeros does not describe nor suggest a seal assembly for a gas turbine engine as is recited in Claim 6. Specifically, Kalogeros does not describe nor suggest a downstream arm coupled to a second stage disk using an interference fit nor does Kalogeros describe or suggest an upstream arm coupled to a disk retainer using an interference fit. Rather, in contrast to the present invention, Kalogeros describes a turbine side plate assembly that is

positioned between first and second stage turbines and positions "O" seals in the side plate assembly against the projections to minimize leakage.

Claims 7, 11, and 12 depend from independent Claim 6. When the recitations of Claims 7, 11, and 12 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7, 11, and 12 likewise are patentable over Kalogeros.

Claim 13 recites a gas turbine engine comprising "a rotor assembly comprising a first stage disk, a second stage disk, and a seal assembly extending therebetween, said seal assembly comprising a disk retainer and an interstage seal assembly, wherein said seal assembly disk retainer is coupled between said first stage disk and said interstage seal, said interstage seal assembly comprising a radially outer shell and a web portion, said outer shell extending radially outward from said web portion and comprising an upstream arm and a downstream arm, said disk retainer coupled between said outer shell upstream arm and said first stage disk, said downstream arm coupled to said second stage disk, wherein said interstage seal assembly upstream arm is coupled to said disk retainer by an interference fit and said downstream arm is coupled to said second stage disk by an interference fit."

Kalogeros does not describe nor suggest a gas turbine engine as is recited in Claim 13. Specifically, Kalogeros does not describe nor suggest a downstream arm coupled to a second stage disk using an interference fit nor does Kalogeros describe or suggest an upstream arm coupled to a disk retainer using an interference fit. Rather, in contrast to the present invention, Kalogeros describes a turbine side plate assembly that is positioned between first and second stage turbines and positions "O" seals in the side plate assembly bearing against the projections to minimize leakage.

Claims 15 and 18-20 depend from independent Claim 13. When the recitations of Claims 15 and 18-20 are considered in combination with the recitations of Claim 13, Applicants submit that dependent Claims 15 and 18-20 likewise are patentable over Kalogeros.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-7, 10-15, and 17-20 be withdrawn.

The rejection of Claims 1-2, 6-9, 10-16, and 18-20 under 35 U.S.C. § 102(b) as being anticipated by Meade et al. (U.S. Patent No. 5,338,154) is respectfully traversed.

Meade et al. describe a turbine disk interstage seal axial retaining ring. Interstage seal 12 includes an outer shell 38 and a central disk 40 having a web 42 and a bore 44. Shell 38 includes a forward arm 46 and an aft arm 48, connected to first disk 14 and second disk 16. Forward arm 46 forms a bayonet connection 52 with disk 14. Bayonet connection 52 includes a plurality of radially inward-extending tabs 54 extending from forward arm 46. Tabs 54 mesh with radially outwardly-extending tabs 56 formed on web 18 of disk 14. Aft arm 48 includes a peripheral groove 60 which aligns with a corresponding plurality of radially-inwardly extending tabs 62 formed on the disk post 64. Notably, forward and aft arms do not couple to the first and second disks with an interference fit, but rather, forward and aft arms mesh together through a plurality of tabs extending from the first and second disks.

Claim 1 recites method for assembling a seal assembly for a gas turbine engine rotor assembly, wherein the method comprises "coupling a disk retainer to a first stage disk, and coupling an interstage seal assembly including an outer shell within the rotor assembly such that a downstream arm extending from the outer shell engages a second stage disk while an upstream arm extending from the outer shell engages the disk retainer in an interference fit."

Meade et al. do not describe nor suggest a method for assembly a seal assembly for a gas turbine engine as is recited in Claim 1. Specifically, Meade et al. do not describe nor suggest coupling an interstage seal assembly to a disk retainer using an interference fit, nor do Meade et al. describe or suggest coupling an interstage seal assembly to a second stage disk using an interference fit. Rather, in contrast to the present invention, Meade et al. describe a turbine disk interstage seal axial retaining ring wherein the forward and aft arms mesh together through a plurality of tabs extending from the first and second disks.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 is considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over Kalogeros.

Claim 6 recites a seal assembly for a gas turbine engine including a first stage disk and a second stage disk, the seal assembly comprising "a disk retainer, and an interstage seal assembly extending between the first and second stage disks, said interstage seal assembly comprising a radially outer shell extending radially outward from a web portion, said outer shell comprising an upstream arm and a downstream arm extending outwardly from said outer shell, said disk retainer coupled between said outer shell upstream arm and the first stage disk, said downstream arm coupled to said second stage disk wherein said upstream arm is coupled to said disk retainer with an interference fit and said downstream arm is coupled to the second stage disk with an interference fit.

Meade et al. do not describe nor suggest a seal assembly for a gas turbine engine as recited in Claim 6. Specifically, Meade et al. do not describe nor suggest a downstream arm coupled to a second stage disk using an interference fit nor do Meade et al. describe or suggest an upstream arm coupled to a disk retainer using an interference fit. Rather, in contrast to the present invention, Meade et al. describe a turbine disk interstage seal axial retaining ring wherein the forward and aft arms mesh together through a plurality of tabs extending from the first and second disks.

Claims 7 and 11-12 depend from independent Claim 6. When the recitations of Claims 7 and 11-12 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7 and 11-12 likewise are patentable over Meade et al.

Claim 13 recites a gas turbine engine comprising "a rotor assembly comprising a first stage disk, a second stage disk, and a seal assembly extending therebetween, said seal assembly comprising a disk retainer and an interstage seal assembly, wherein said seal assembly disk retainer is coupled between said first stage disk and said interstage seal, said interstage seal assembly comprising a radially outer shell and a web portion, said outer shell extending radially outward from said web portion and comprising an upstream arm and a

downstream arm, said disk retainer coupled between said outer shell upstream arm and said first stage disk, said downstream arm coupled to said second stage disk, wherein said interstage seal assembly upstream arm is coupled to said disk retainer by an interference fit and said downstream arm is coupled to said second stage disk by an interference fit."

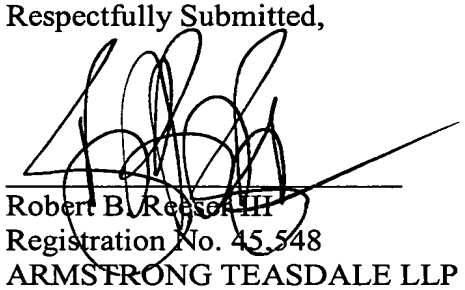
Meade et al. do not describe nor suggest a gas turbine engine as recited in Claim 13. Specifically, Meade et al. do not describe nor suggest a downstream arm coupled to a second stage disk with an interference fit nor do Meade et al. describe or suggest an upstream arm coupled to a disk retainer with an interference fit. Rather, in contrast to the present invention, Meade et al. describe a turbine disk interstage seal axial retaining ring wherein the forward and aft arms mesh together through a plurality of tabs extending from the first and second disks.

Claims 15 and 18-20 depend from independent Claim 13. When the recitations of Claims 15 and 18-20 are considered in combination with the recitations of Claim 13, Applicants submit that dependent Claims 15 and 18-20 likewise are patentable over Meade et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-2, 6-9, 10-16, and 18-20 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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